Volunteer Lake Assessment Program Individual Lake Reports
OSSIPEE LAKE, OSSIPEE, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	209,595	Max. Depth (m):	18.5	Flushing Rate (yr⁻¹)	4.6
Surface Area (Ac.):	3092	Mean Depth (m):	8.5	P Retention Coef:	0.39
Shore Length (m):	17,100	Volume (m³):	108,421,500	Elevation (ft):	406

TROPHIC CLASSIFICATION

Year	Trophic class
1987	OLIGOTROPHIC
2003	OLIGOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Encouraging	>2 samples exist that are > 75% of geometric mean criteria, but not enough samples to calculate geomertic mean. No single sample exceedances. More data needed.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

OSSIPEE LAKE - OSSIPEE LAKE NATURAL AREA	E. coli	Slightly Bad	Slightly exceeds criteria.
OSSIPEE LAKE - CAMP CODY FOR BOYS BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
OSSIPEE LAKE - DEER COVE PB BEACH	E. coli	No Data	No Data for this parameter.
OSSIPEE LAKE - CAMP CALUMET BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.
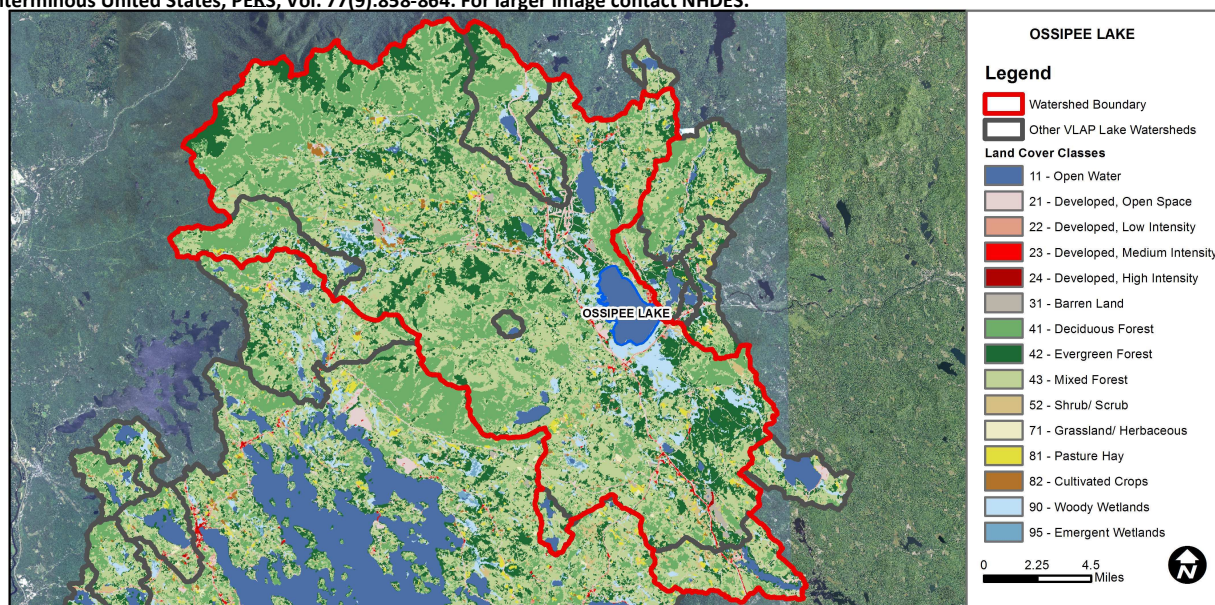
| Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	3.48	Barren Land	0.66	Grassland/Herbaceous	0.37
Developed-Open Space	2.87	Deciduous Forest	22.98	Pasture Hay	0.86
Developed-Low Intensity	0.75	Evergreen Forest	20.55	Cultivated Crops	0.51
Developed-Medium Intensity	0.25	Mixed Forest	38.67	Woody Wetlands	4.85
Developed-High Intensity	0.04	Shrub-Scrub	2.52	Emergent Wetlands	0.59

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic*)

- **CHLOROPHYLL-A:** Chlorophyll levels increased slightly in 2012 however were below the NH lake median. Historical trend analysis indicates a stable chlorophyll level since monitoring began.
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride levels were low and below the NH lake medians.
- **TOTAL PHOSPHORUS:** Phosphorus levels were relatively low and below the NH lake median. Historical trend analysis indicates a relatively stable epilimnetic (upper water layer) phosphorus level.
- **TRANSPARENCY:** Lake transparency was not measured in 2012, we apologize for the inconvenience. Historical transparency has fluctuated from year to year.
- **TURBIDITY:** Turbidity levels were low in 2012.
- **pH:** pH levels decrease to undesirable levels in the metalimnion (middle water layer) and hypolimnion (lower water layer).
- **RECOMMENDED ACTIONS:** Conduct monthly water quality monitoring (June, July, August), phytoplankton haul, and dissolved oxygen and temperature profile to better assess water quality. Although phosphorus levels are relatively low, watershed management efforts should focus on best management practices to reduce stormwater runoff to the lake.

Dissolved Oxygen & Temperature Profile

Ossipee Lake Phytoplankton Population

Legend: Greens, Cyanobacteria, Golden-Brown, Diatoms
2%, 22%, 36%, 40%
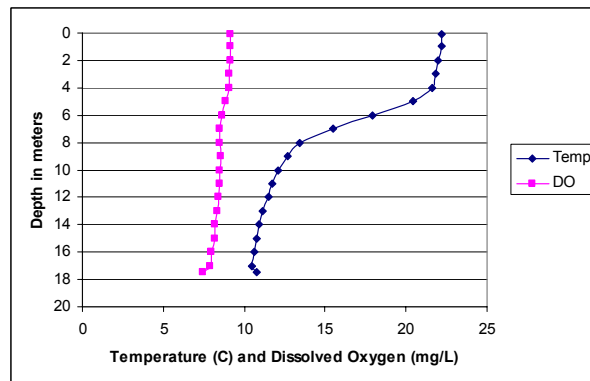
Station Name	Table 1. 2012 Average Water Quality Data for OSSIPEE LAKE						
	Alk.	Chlor-a	Chloride	Cond.	Total P	Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	ntu	
Deep Epilimnion	4.1	4.48	4	33.3	8	0.68	6.79
Deep Metalimnion				32.8	8	0.67	6.26
Deep Hypolimnion				36.2	7	0.82	6.23
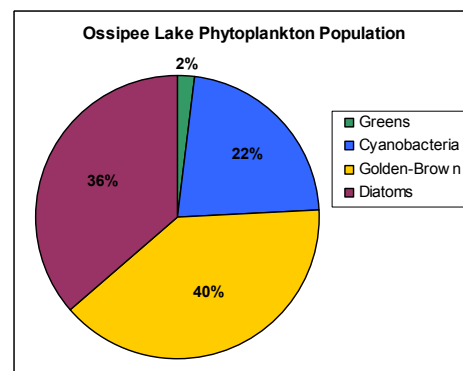
NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m³
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Stable	Data not significantly increasing or decreasing.
Transparency	N/A	Need 10 consecutive years of data to establish trend.
Phosphorus (epilimnion)	Stable	Data not significantly increasing or decreasing.

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Historical Deep Spot
Chlorophyll-a, Epilimnetic Total Phosphorus & Transparency Data